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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,317	07/17/2003	Brian R. Micheli	DI-5829	3439

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EXAMINER
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DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/623,317

Applicant(s)

MICHELI, BRIAN R.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-17 and 32-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-17 and 32-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9-12,15-17,32-41,43-49, and 52-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al Journal Publication "Innovative Peritoneal Dialysis: Flow-Thru and Dialysate Regeneration" from Scholarly Review, ASAIO Journal 1999, pages 372-378 in view of Devries patent 3,545,438 (of record with a previously submitted IDS statement).

Roberts et al disclose the claimed peritoneal dialysis system including elements of dual lumen catheter (page 372, 1<sup>st</sup> column, and components shown in figure 3 that include closed loop fluid circuit, plural dialysate supplies, therapy fluid/osmotic agent or 'infusate' supply, cycler pumps for circulating (figures 3,5 and 6), cleaning device at least including a sorbent cartridge and a discharge path/drain in the vicinity of the dialysate supplies. Also shown in figure 3 is a surge reservoir, in the closed loop fluid

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circuit (embodiments of figures 3 and 5-8). For independent claims 28, and 51, removal of urea is discussed on page 373, 1<sup>st</sup> column and in Table 1.

Regarding various dependent claims; two separate dialysate supplies totaling less than 4 or 6 liters are shown as well in figure 3, with osmotic agent supply inherently totaling less than 1.5 liters (see discussion on page 373, 2<sup>nd</sup> column, removal of urea by either non-selective sorbent or urease-urea removal specific media (page 374, 2<sup>nd</sup> column and page 376, 2<sup>nd</sup> column), presence of sorbent material (page 373, 2<sup>nd</sup> column), maintaining of high urea and creatinine clearance levels (see Table 1 on page 376), the infusate constituting electrolytes and components with osmotic diffusive enhancing characteristics (page 376, see paragraph entitled "Wearable Regeneration Systems"), treatment periods of 8 hours or less (page 376, 2<sup>nd</sup> column, 3<sup>rd</sup> paragraph), continuous circulation and supply portions of 4 liters or less each (page 372, 1<sup>st</sup> column), and option of lower 3 liter or less amounts of osmotic solution utilized (see especially page 374 concerning treatment of relatively smaller canine systems). For claim 35, 38 and 45 and claims dependent therefrom ultrafiltration is discussed under Section Header "Wearable Regeneration Systems".

The pending claims 9-17, 32-44 and 55-60 all differ from Roberts in requiring a reservoir (or the reservoir) as branching off of the closed loop, fluidly coupled to the closed loop and cyler (pumps 32 and 50) and adapted to provide a variable increase in volume capacity so as to compensate for increase in fluid volume in the circuit during treatment, such as by addition of fresh dialysate. DeVries teaches a closed loop peritoneal dialysis circuit including reservoir circulation tank 16 in the circuit, and having a supplemental branched off container, tank or reservoir 44 that is fluidly coupled to surge circulation tank 16 and also to cyler pumps 32 and 50 via various conduits and via valves 42 and 30. The supplemental tank allows for increased capacity for holding of overflow and excess fresh dialysate solution that enters the closed loop from fresh dialysate source 10 (column 4, lines 12-43 and figures) and can be selectively drained (column 4, lines 35-42) and used to measure the amount of dialysis solution in circulation after a treatment cycle to determine the efficacy of the treatment (column 4, line 43-column 5, line 5). It would have been obvious to one of ordinary skill in the dialysis art, at the time of the invention, to have supplemented the Roberts system, with the branched container or reservoir of DeVries, in order to safely allow introduction of substantial volumes of fresh dialysate into the circuit, and to measure amounts of dialysate in circulation.

The claims now also all differ in requiring the reservoir to be fluidly coupled to the cyler and branching off of the closed loop in such manner that the cyler can move fluid at a controlled flowrate, which can be calibrated, to the reservoir. However, DeVries also teaches using a variable speed (hence controllable speed) pumps 32 and

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50 to circulate fluid through the circuit and towards the reservoir (column 2, lines 56-65).

Control of the pump speed hence the flow rate of fluid throughout the circuit is discussed at column 2, line 70-column 3, line 5. It would have been further obvious to the ordinarily skilled artisan to have utilized a controllable or variable speed pump as in DeVries in the system of Roberts, in order to be able to adjust speed of dialysis fluid through the system to accommodate dialysate treatment needs of the patient, such as time periods of dialysis or changing health needs of the patient (see for instance Introduction to the Roberts publication at page 1). Such control of fluid flowrate is also desirable to tailor the output and cycle of dialysis to the specific requirements of each patient's treatment (column 3, lines 3-5 of DeVries).

Claims 45-54 differ from Roberts in requiring the draining of the fluid circuit be at an effective rate to compensate for the increase in fluid volume (such as provided by a supplemental branched reservoir). DeVries also teaches such draining (column 4, lines 35-42). Again, it would have been obvious to one of ordinary skill in the art to have instituted such supplemental fluid storage and drainage, as taught by DeVries to safely allow introduction of substantial volumes of fresh dialysate into the circuit.

Claims 13,14,42,50,51 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Roberts et al Journal Article in view of DeVries patent 3,545,438 as applied to claims 9,38,45 and 55 and further in view of Shockley et al patent 5,631,025.

Claims 13,14,42,50,51 and 60 further differ in requiring that the osmotic agent fluid supply include dextrose. Shockley et al teach use of dextrose at column 5, lines

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18-25 and supporting rationale. It would have been obvious to one of ordinary skill in the art to have included dextrose in the infusate supply of Roberts et al, as taught by Shockley, in order to enhance removal of various toxins by ultrafiltration from the recirculating dialysate.

Applicant's arguments with respect to claims 9-17 and 32-60 have been considered but are moot in view of the new ground(s) of rejection.

It is argued that the spent reservoir 44 of DeVries is only a spillover tank and not in controlled flow communication with a cyclor or circulator. It is submitted that reservoir 44 of DeVries is fluidly coupled to the cyclor pumps 32 and 50. Even though it functions as a spillover tank, such function is one possible manner of providing extra fluid volume capacity to the peritoneal dialysis circuit, not precluded by claim language. The cyclor pumps control the rate of flow throughout the entire circuit, including flow rates into closed loop reservoir 16 and branched reservoirs 16 and 36. Flow control is explicitly taught, contrary to argument, in column 2, lines 56-column 3, line 5 of DeVries.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

November 2, 2006

  
JOSEPH DRODGE  
PRIMARY EXAMINER